In the Specification

Kindly replace paragraphs [0020] through [0035] with the following:

DISCLOSURE OF THE INVENTIONSUMMARY

In consideration of points mentioned hereinabove, the first object of the present invention is to propose We provide a fiber bundle traversing device for stabilizing the yarn path of a flat fiber bundle required to be wound in a thin and uniformly spread state, without causing any trouble such as entanglement of single fibers, and ensuring a good winding appearance of the winding package of fiber bundle and realizing the quality improvement, and a manufacturing method of fiber bundle package using the fiber bundle traversing device.

Moreover, another object of the present invention is to propose we provide a new yarn path guide which is not limited to the case of being used for the aforementioned traversing device, but is effective for stabilizing the yarn path without causing any trouble such as entanglement of single fibers, further propose a manufacturing apparatus of fiber bundle package using the yarn path guide.

A yarn path guide according to the present invention for achieving the aforementioned object has a constitution as mentioned below.

That is to say, it concerns a The yarn path guide for guiding a traveling yarn, comprising comprises a guide roll and a supporting member that supports the guide roll, wherein the supporting member has a rotating shaft at a position twisted at a right angle to the rotating shaft of the guide roll, and the yarn path guide is arranged such that the guide roll is inclined with respect to the yarn path through rotation around the rotating shaft of the supporting member in response to variation of the yarn path and the fiber bundle is guided automatically in the yarn path direction.

A manufacturing apparatus of fiber bundle package according to the present invention for achieving the aforementioned object has a constitution as mentioned below.

That is to say, it concerns a manufacturing apparatus of fiber bundle package, comprising comprises the aforementioned path guide according to the present invention.

A fiber bundle traversing device according to the present invention for achieving the aforementioned object has a constitution as mentioned below.

That is to say, it concerns a fiber bundle traversing device comprising comprises a traverse guide for guiding the fiber bundle and a traverse mechanism of the traverse guide, and traversing the fiber bundle by reciprocating said traverse guide in the bobbin rotation direction by means of the traverse mechanism, wherein said traverse guide has a yarn guide mechanism for guiding the fiber bundle performing such an operation that the traverse guide deviates from the yarn path in the original yarn path direction.

More particularly, it concerns a fiber bundle traversing device using the aforementioned yarn path guide according to the present invention as the guide mechanism.

Or, another Another fiber bundle traversing device according to the present invention for achieving the aforementioned object has a constitution as mentioned below.

That is to say, it concerns a fiber bundle traversing device comprising comprises a traverse guide for guiding the fiber bundle and a traverse mechanism of the traverse guide, and traversing the fiber bundle by reciprocating said traverse guide in the bobbin rotation direction by means of the traverse mechanism, wherein said traverse guide comprises, at least, an upper guide roll of which a roll rotating shaft is arranged at a position twisted substantially at a right angle to said bobbin rotating shaft and a final guide roll of which the roll rotating shaft of is arranged substantially parallel to said bobbin rotating shaft, wherein these upper guide roll and final guide roll are arranged respectively such that the rotating shaft direction of the guide roll and the direction of the yarn path entering the guide roll cross substantially at a right angle.

Moreover, a fiber bundle winding device according to the present invention for achieving the aforementioned object has a constitution as mentioned below.

That is to say, it concerns a fiber bundle winding device comprising comprises the aforementioned fiber bundle traversing device according to the present invention.

Besides, a manufacturing method of fiber bundle package according to the present invention is a manufacturing method of fiber bundle package using the fiber bundle traversing device or the fiber bundle winding device according to the present invention.

According to the aforementioned yarn path guide of the present invention, a new yarn path guide for stabilizing the yarn path without causing any trouble, e.g. entanglement of single fibers can be provided.

According to the manufacturing apparatus of fiber bundle package of the present invention, a fiber bundle package which has a stable and good winding appearance and can be handled easily in the higher order processing steps can be provided.

Kindly replace paragraphs [0037] through [0038] with the following:

According to the fiber bundle winding device of the present invention, a fiber bundle package which has a stable and good winding appearance and can be handled easily in the higher order processing steps can be provided, because the yarn path is stabilized without causing any trouble such as entanglement of single fibers and moreover the traversing can be stabilized and a well-balanced traversing and winding can be ensured.

Moreover, according to the manufacturing method of fiber bundle package of the present invention, a fiber bundle package which has a stable and good winding appearance and can be handled easily in the higher order processing steps can be provided.

Kindly replace paragraphs [0041] through [0042] with the following:

BEST MODE FOR CARRYING OUT THE INVENTIONDETAILED DESCRIPTION

Hereinafter, the A representative yarn path guide and the-fiber bundle traversing device according to the present invention will be more concretely described with referent to the drawings. Fig. 1 is a schematic model perspective view showing in a model-like manner the overall structure of yarn path guide 1-according to the present invention. The yarn path guide 1 according to the present invention guides traveling yarn (fiber bundle) Y and comprises a guide roll 1 and a supporting member 3 that supports the guide roll. The supporting member 3 has a rotating shaft 4 at a position twisted at a right angle in the rotating shaft direction of the guide roll 2 and is constituted so that the yarn (fiber bundle) can be guided automatically in the central direction of the original yarn path (yarn path set based on the position of supporting the traveling yarn on the upstream and downstream side. In terms of the device constitution, the set yarn path. It does not need to be straight and may have the region or the range.) by inclining the guide roll 2 with respect to the yarn path through rotation around the rotating shaft 4 of the supporting member, in response to variation of the yarn path (actual path of the traveling yarn).